

WHAT IS CLAIMED IS:

1. A method for producing a molded body firmly bonded to a grained or structured molded skin, comprising the following steps:

a) inserting a spatially conformed, elastic skin having a graining or structuring on an inside thereof, into a receiving mold open on one side of a tool bottom part so that an outside of the elastic skin abuts and is stabilized by an inner wall of the receiving mold;

b) applying a liquid plastic film with a predefined film thickness to the grained or structured inside of the elastic skin;

c) hardening the plastic film so that a molded skin is formed;

d) back-foaming the molded skin to form the molded body and forming a firm bond between the molded body and the molded skin by introducing reactive foaming agents into an intermediate space that is delimited by an inside of

the molded skin and a spatially conformed tool top part, which is inserted into the receiving mold of the tool bottom part, the dimensions of the intermediate space, and thus also of the foam that forms the molded body, being defined by contours of the molded skin and the tool top part, and the intermediate space being sealed off from the tool top part during foaming;

e) removing the elastic skin, molded skin, and the molded body all together in a single assembly from the receiving mold of the tool bottom part, the tool top part being removed either before or after the removal of the assembly; and

f) stripping the elastic skin from the molded skin, which is firmly bonded with the molded body, so that a graining or structuring remains on the surface of the molded skin after the elastic skin is stripped away.

2. The method according to claim 1, wherein the tool top part includes a detachable and spatially conformed support, which at least partially delimits the intermediate space instead of the tool top part, the dimensions of the

intermediate space being defined by the contours of the molded skin and at least partially by the support, and wherein the assembly of elastic skin, molded skin, and the molded body with the support embedded therein is removed from the receiving mold of the tool bottom part, the tool top part being detached and removed from the support either before or after removal of the entire assembly.

3. The method according to claim 1, wherein the reactive foaming agents comprise raw materials that form open-cell polyurethane foams.

4. The method according to claim 1, wherein the step of back-foaming takes place under the influence of heat, and wherein the tool top part is heated via at least one heating channel extending in tool top part.

5. A method for producing a molded body firmly bonded with a grained or structured molded skin, comprising the following steps:

a) inserting a spatially conformed, elastic skin having a graining or structuring on an inside thereof, into a

receiving mold of a tool bottom part that is open on one side, in such a manner that an outside of the elastic skin abuts and is stabilized by an inner wall of the receiving mold;

b) applying a liquid plastic film with a predefined film thickness to the grained or structured inside of the elastic skin;

c) hardening the plastic film to form the molded skin;

d) bonding a molded body configured as a support to the molded skin by applying a primer and/or adhesive to an inside of the molded skin, and pressing the support, which is formed as a detachable part of a tool top part onto the molded skin to which the primer and/or adhesive has been applied, thereby forming a firm bond between the support and the molded skin;

e) removing the elastic skin, molded skin, and the molded body in a single assembly from the receiving mold of the tool bottom part, the tool top part being detached and

removed from the molded body either before or after removal of the assembly; and

f) stripping the elastic skin from the molded skin which is firmly bonded to the molded body, so that a graining or structuring remains on the surface of the molded skin after the elastic skin has been stripped away.

6. A method for producing a molded body firmly bonded with a grained or structured molded skin, comprising the following steps:

a) inserting a spatially conformed, elastic skin having a graining or structuring on an inside thereof into a receiving mold of a tool bottom part that is open on one side, in such a manner that an outside of the elastic skin abuts and is stabilized by an inner wall of the receiving mold;

b) applying a liquid plastic film with a predefined film thickness to the grained or structured inside of the elastic skin;

c) hardening the plastic film to form the molded skin;

d) bonding a molded body configured as a support to the molded skin by pressing the support onto the not yet completely hardened plastic film, such that a firm bond between the support and the molded skin is created when the plastic film has fully hardened;

e) removing the elastic skin, molded skin, and the molded body in a single assembly from the receiving mold of the tool bottom part, the tool top part being detached and removed from the molded body either before or after removal of the assembly; and

f) stripping the elastic skin from the molded skin which is firmly bonded to the molded body, so that a graining or structuring remains on the surface of the molded skin after the elastic skin has been stripped away.

7. The method according to claim 1, wherein the elastic skin stripped off is reused directly in method step a).

8. The method according to claim 1, wherein the liquid plastic film is applied with a predefined film thickness to the grained or structured inside of the elastic skin by pouring or injecting the liquid plastic into an intermediate space, which is delimited by the inside of the elastic skin and tool top part that is inserted into the receiving mold of the tool bottom part, the dimensions of the intermediate space being defined by the contours of the elastic skin and the tool top part, and the tool top part is removed from the receiving mold of the tool bottom part after the plastic layer at least partially hardens.

9. The method according to claim 8, wherein the plastic film hardens under the influence of heat, the tool top part being heated via at least one heating channel extending in the tool top part.

10. The method according to claim 1, wherein the plastic film is made from a material selected from the group consisting of: cross-linkable polyurethanes, polyurethane molding resins, liquid cross-linkable substances, epoxy resins, non-reactive hot-melt substances, thermoplastic polyurethanes (TPU), thermoplastic polyolefins (TPO),

thermoplastic elastomers (TPE), polyvinyl chloride (PVC) and mixtures thereof.

11. The method according to claim 1, wherein the plastic film is formed from a single- or multi-component, cross-linkable polyurethane system that is based on aliphatic or aromatic starter materials.

12. The method according to claim 1, wherein after performing step a) a thin paint layer is applied as an in-mold coating to the grained inside of the elastic skin and is dried or hardened, and method step b) is subsequently performed, the liquid plastic film being applied to the thin paint layer.

13. The method according to claim 12, wherein different regions of the inside of the elastic skin are coated with different coloured paints.

14. A device for manufacturing a molded body firmly bonded to a grained or structured molded skin, comprising a spatially conformed, elastic skin having a



graining or structuring on an inside thereof, said skin being formed from a flexible elastomer polyurethane or rubber skin.

15. The device according to claim 14, further comprising reinforcing elements arranged in the elastic skin.

16. The device according to claim 14, wherein the spatially conformed, elastic skin is produced by applying a liquid silicone prepolymer to a grained or structured positive model and then cross-linked by an addition and/or condensation reaction, and subsequently stripped away from the positive model, the elastic skin representing a spatially conformed negative image of the molded skin to be produced and having on its inside a corresponding graining or structuring.

17. The device according to claim 16, wherein the elastic skin is made of silicone and wherein silicone is removed from the outside of the skin that has been stripped from the positive model until a predefined layer thickness of the skin is obtained.

18. The device according to claim 16, wherein the elastic skin is produced by introducing the liquid silicone prepolymer into an intermediate space of a closed tool, delimited by a tool top part mirroring the positive model and a spatially conformed tool bottom part positioned over the positive model, the dimensions of the intermediate space being defined by the contours of the tool bottom part and the tool top part, wherein cross-linking to the silicone skin occurs after introduction of the silicone prepolymer into the intermediate space.

19. The device according to claim 14, wherein the elastic skin has a layer thickness between 0.8 and 10 mm.

20. The device according to claim 14, further comprising a tool bottom part forming a receiving cavity, wherein the tool bottom part is constructed in several parts and includes movable elements.

21. The device according to claim 20, further comprising a tool top part mirroring the positive model, said tool top part being constructed in several pieces and including movable elements.

22. The device according to claim 21, wherein the tool top or bottom parts include heating channels via which the tool top or bottom part can be heated.

23. A molded body firmly bonded to a grained or structured and painted molded skin, produced via a method according to claim 1.

24. A molded body firmly bonded to a grained molded skin and produced via a method according to Claim 8, the molded skin having a layer thickness between 0.3 and 5 mm.

25. The method according to claim 5, wherein the elastic skin stripped off is reused directly in method step a).

26. The method according to claim 5, wherein the liquid plastic film is applied with a predefined film thickness to the grained or structured inside of the elastic skin by pouring or injecting the liquid plastic into an intermediate space, which is delimited by the inside of the elastic skin and tool top part that is inserted into the

receiving mold of the tool bottom part, the dimensions of the intermediate space being defined by the contours of the elastic skin and the tool top part, and the tool top part is removed from the receiving mold of the tool bottom part after the plastic layer at least partially hardens.

27. The method according to claim 26, wherein the plastic film hardens under the influence of heat, the tool top part being heated via at least one heating channel extending in the tool top part.

28. The method according to claim 5, wherein the plastic film is made from a material selected from the group consisting of: cross-linkable polyurethanes, polyurethane molding resins, liquid cross-linkable substances, epoxy resins, non-reactive hot-melt substances, thermoplastic polyurethanes (TPU), thermoplastic polyolefins (TPO), thermoplastic elastomers (TPE), polyvinyl chloride (PVC) and mixtures thereof.

29. The method according to claim 5, wherein the plastic film is formed from a single- or multi-component,

cross-linkable polyurethane system that is based on aliphatic or aromatic starter materials.

30. The method according to claim 5, wherein after performing step a) a thin paint layer is applied as an in-mold coating to the grained inside of the elastic skin and is dried or hardened, and method step b) is subsequently performed, the liquid plastic film being applied to the thin paint layer.

31. The method according to claim 30, wherein different regions of the inside of the elastic skin are coated with different coloured paints.

32. The method according to claim 6, wherein the elastic skin stripped off is reused directly in method step a).

33. The method according to claim 6, wherein the liquid plastic film is applied with a predefined film thickness to the grained or structured inside of the elastic skin by pouring or injecting the liquid plastic into an intermediate space, which is delimited by the inside of the

elastic skin and tool top part that is inserted into the receiving mold of the tool bottom part, the dimensions of the intermediate space being defined by the contours of the elastic skin and the tool top part, and the tool top part is removed from the receiving mold of the tool bottom part after the plastic layer at least partially hardens.

34. The method according to claim 33, wherein the plastic film hardens under the influence of heat, the tool top part being heated via at least one heating channel extending in the tool top part.

35. The method according to claim 6, wherein the plastic film is made from a material selected from the group consisting of: cross-linkable polyurethanes, polyurethane molding resins, liquid cross-linkable substances, epoxy resins, non-reactive hot-melt substances, thermoplastic polyurethanes (TPU), thermoplastic polyolefins (TPO), thermoplastic elastomers (TPE), polyvinyl chloride (PVC) and mixtures thereof.

36. The method according to claim 6, wherein the plastic film is formed from a single- or multi-component,

cross-linkable polyurethane system that is based on aliphatic or aromatic starter materials.

37. The method according to claim 6, wherein after performing step a) a thin paint layer is applied as an in-mold coating to the grained inside of the elastic skin and is dried or hardened, and method step b) is subsequently performed, the liquid plastic film being applied to the thin paint layer.

38. The method according to claim 37, wherein different regions of the inside of the elastic skin are coated with different coloured paints.